VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below This permit is being processed as a **Minor, Industrial** permit The effluent limitations contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq The discharge results from the operation of a water treatment plant This permit action consists of updating boilerplate

1 **Facility Name and Address** **SIC Code** 4941

Clifton Forge Water Treatment Plant
P O Box 631
Clifton Forge, VA 24422

Location 2500 Sulfur Spring Road, Clifton Forge 24422 (Alleghany County)

2 **Permit No VA0006076** **Expiration Date** October 15, 2009

3 **Owner Contact**

Name	Robert R Irvine
Title	Superintendent
Telephone No	(540) 863-2522

4 Application Complete Date April 17, 2009
Permit Drafted By Kevin A Harlow Date September 4, 2009
DEQ Regional Office Blue Ridge Regional Office - Roanoke
Reviewed By _____ Date 9/11/09

5 **Receiving Waters Classification**
Receiving Stream Smith Creek
Basin James River (Upper) Subbasin N/A Section 12 Class VI Special Standards None

7-Day, 10-Year Low Flow 0 00 MGD 1-Day, 10-Year Low Flow 0 00 MGD
30-Day, 5-Year Low Flow 0 00 MGD Harmonic Mean Flow 0 41 MGD
30-Day, 10-Year Low Flow 0 00 MGD
Tidal No On 303(d) list? No

6 **Licensed Operator Requirements** None

7 **Reliability Class** N/A

8 **Permit Characterization**
( ) Private ( ) Federal ( ) State (X) POTW
( ) Possible Interstate Effect ( ) Interim Limits in Other Document

9 **Treatment Provided**
See attached site inspection report and flow diagram (**Attachment A**)

Revised 2/2003

State "FY2003 Transmittal Checklist" to Assist in Targeting Municipal and Industrial Individual NPDES Draft Permits for Review

Part I State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence

Facility Name: Clifton Forge Water Treatment Plant

NPDES Permit Number: VA0025305

Permit Writer Name: Kevin A Harlow

Date: September 4, 2009

Major [ ] **Minor** [X] **Industrial** [X] **Municipal** [ ]

I A. Draft Permit Package Submittal Includes		Yes	No	N/A
1	Permit Application?	X		
2	Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3	Copy of Public Notice?		**X**	
4	Complete Fact Sheet?	X		
5	A Priority Pollutant Screening to determine parameters of concern?	X		
6	A Reasonable Potential analysis showing calculated WQBELs?	X		
7	Dissolved Oxygen calculations?			X
8	Whole Effluent Toxicity Test summary and analysis?			X
9	Permit Rating Sheet for new or modified industrial facilities?			X

I B Permit/Facility Characteristics		Yes	No	N/A
1	Is this a new, or currently unpermitted facility?		X	
2	Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3	Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		

Part II NPDES Draft Permit Checklist (FY2003)

Region III NPDES Permit Quality Review Checklist – For Non-Municipals

(To be completed and included in the record for all non-POTWs)

II A. Permit Cover Page/Administration	Yes	No	N/A
1 Does the fact sheet **or** permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2 Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II B Effluent Limits – General Elements	Yes	No	N/A
1 Does the fact sheet describe the basis of final limits in the permit (e g , that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2 Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II C Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1 Is the facility subject to a national effluent limitations guideline (ELG)?		X	
a If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			X
b If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?	X		
2 For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125 3(d)?	X		
3 Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?	X		
4 For all limits that are based on production or flow, does the record indicate that the calculations are based on a "reasonable measure of ACTUAL production" for the facility (not design)?			X
5 Does the permit contain "tiered" limits that reflect projected increases in production or flow?		X	
a If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6 Are technology-based permit limits expressed in appropriate units of measure (e g , concentration, mass, SU)?	X		

II C Technology-Based Effluent Limits (Effluent Guidelines & BPJ) – cont	Yes	No	N/A
7 Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?		X	
8 Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

II D Water Quality-Based Effluent Limits	Yes	No	N/A
1 Does the permit include appropriate limitations consistent with 40 CFR 122 44(d) covering State narrative and numeric criteria for water quality?	X		
2 Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
3 Does the fact sheet provide effluent characteristics for each outfall?	X		
4 Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i e , do calculations include ambient/background concentrations where data are available)?	X		
e Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5 Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6 For all final WQBELs, are BOTH long-term (e g , average monthly) AND short-term (e g , maximum daily, weekly average, instantaneous) effluent limits established?	X		
7 Are WQBELs expressed in the permit using appropriate units of measure (e g , mass, concentration)?	X		
8 Does the fact sheet indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II E Monitoring and Reporting Requirements (FY2003)	Yes	No	N/A
1 Does the permit require at least annual monitoring for all limited parameters?	X		
a If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2 Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3 Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices?	X		

II F Special Conditions	Yes	No	N/A
1 Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?		X	
a If yes, does the permit adequately incorporate and require compliance with the BMPs?			X
2 If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3 Are other special conditions (e g , ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

II G Standard Conditions	Yes	No	N/A
1 Does the **permit** contain all 40 CFR 122 41 standard conditions or the State equivalent (or more stringent) conditions?	X		

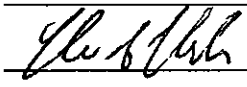
List of Standard Conditions – 40 CFR 122 41

Duty to comply
Duty to reapply
Need to halt or reduce activity not a defense
Duty to mitigate
Proper O & M
Permit actions
Property rights
Duty to provide information
Inspections and entry
Monitoring and records
Signatory requirement
Bypass
Upset
Reporting Requirements
Planned change
Anticipated noncompliance
Transfers
Monitoring reports
Compliance schedules
24-Hour reporting
Other non-compliance

2 Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122 42(a)]?	X		

Part III Signature Page (FY2003)

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge

Name	Kevin A Harlow
Title	Environmental Engineer, Sr
Signature	
Date	9/4/2009

The Clifton Forge Water Treatment Plant (WTP) produces potable water for distribution to the Town of Clifton Forge and portions of Alleghany County The Smith Creek Reservoir supplies the raw water for the treatment plant Copper sulfate is used to control algae in the reservoir during the spring and summer Disinfection is accomplished with pre-chlorination of the raw water in the mixing basins and post-chlorination in the clearwell Lime and aluminum sulfate (alum) are added in the mixing basins to enhance settling in the sedimentation basins The water is also fluoridated After the sedimentation basins, the water passes through rapid sand filters Lime is added after filtration for corrosion control and the finished water is stored in a clearwell Wastewater is generated from the backwashing of the filters, blowdown of the mixing basin, and blowdown of the sedimentation basins

The wastewater from the various activities is directed to a single settling pond The wastewater is held in the pond to allow for settling Once visually inspected by the operator, a gate valve is opened and the wastewater is discharged from the top of the pond through a floating discharge pipe The accumulated solids are transferred as need to an unlined long-term sludge storage pit upgradient of the settling pond The solids are allowed to drain in the pit The solids have never been removed from the pit

10 **Sewage Sludge Use or Disposal** Settled sludge is periodically removed from the settling pond and transferred to an unlined pit where the solids are allowed to dewater No solids have been removed from this pit in the 20+ years that the pit has been in operation, although capacity is not an issue A 1996 chemical analysis of the sludge is included in **Attachment G**

11 **Discharge(s) Location Description**
Name of Topo Clifton Forge - VA (See **Attachment C**)
Quadrangle Number 159D
Latitude (Outfall 001) 37° 50' 00" Longitude (Outfall 001) 79° 50' 17"

12 **Material Storage** Chemicals such as chlorine, flouride, alum, and lime are stored indoors where the mixing/addition occurs

13 **Ambient Water Quality Information**
The water body ID for this receiving stream is VAW-I09R A copy of the flow frequency determination memo for the discharge is included in **Attachment D** The receiving stream for Outfall 001 is Smith Creek on the USGS Clifton Forge Quadrangle topographic map The flow frequencies are 0 00 mgd for the 1Q10, 0 00 mgd for the 7Q10, 0 00 mgd for the 30Q5, 0 00 mgd for the high flow 7Q10, and 0 41 mgd for the harmonic mean

Ambient water quality data on Smith Creek has been collected at sampling station 2-SMH000 08 at Ridgeway Street in Clifton Forge The pertinent data for permit reissuance is included in **Attachment E**

The facility discharges to Smith Creek at river mile 3 31 Smith Creek at the discharge point is not a 303(d) listed segment However, Smith Creek from its mouth on the Jackson River upstream 1 20 miles is bacteria impaired (Cause Group Code I09R-01-BAC) Also, the Jackson River at Smith Creek is benthic impaired (Cause Group Code I09R-01-BEN) from periphyton growth caused by excessive nutrients Although the TMDLs for each of these impaired segments have not been developed it is anticipated that the facility will not receive a wasteload allocation in either TMDL since the facility discharges neither bacteria nor nutrients that resulted in the impairments

14 **Antidegradation Review and Comments**
Tier 1 _____ 2 _X_____ 3

The State Water Control Board's Water Quality Standards (WQS) (9 VAC 25-260-30) provide all state surface waters one of three levels of antidegradation protection For Tier I, existing uses of the water body and the water quality must be maintained A Tier II water body has water quality that is better than the narrative and numeric water quality criteria Significant lowering of the water quality of a Tier II water is not allowed without an evaluation of the economic and social impacts, as required by Water Quality Standards, 9 VAC 25-260-30 A Tier III water body is an exceptional water body that is designated by regulation The antidegradation policy prohibits new or expanded discharges into exceptional waters

The antidegradation review begins with the Tier determination Smith Creek is a perennial stream and is not listed on Part 1 of the 303(d) list for exceedances of water quality criteria (See **Attachment E**) Smith Creek is determined to be a Tier II water, and no significant degradation of existing quality is allowed This determination is based on the fact that there are no data to indicate that this water is not better than the standards for all parameters that the Board has adopted criteria

For purposes of aquatic life protection, "significant degradation" means that no more that 25% the difference between the acute and chronic aquatic criteria values and the existing quality (unused assimilative capacity) may be allocated For purposes of human health protection, "significant degradation" means that no more than 10% of the difference between the human health criteria and the existing quality (unused assimilative capacity) may be allocated The significant degradation baseline (antidegradation baseline) is calculated for each pollutant as follows

Antidegradation baseline (aquatic life) = 0 25 (WQS – existing quality) + existing quality

Antidegradation baseline (human health) = 0 10 (WQS – existing quality) + existing quality

Where
"WQS" = Numeric criterion listed in 9 VAC 25-260-5 et seq for the parameter analyzed
"Existing quality" = Concentration of the parameter being analyzed in the receiving stream, including the facility's existing discharge

These "antidegradation baselines" become the new water quality criteria in Tier II waters and effluent limits for future expansions or new facilities must be written to maintain the antidegradation baselines at the perennial point for each pollutant Antidegradation baselines have been calculated as described above and included in **Attachment F**

15 **Site Inspection**
Date 8/8/2008 Performed By Gerald A Duff
See **Attachment A** for a copy of the site inspection

16 **Effluent Screening and Limitation Development**
DEQ Guidance Memorandum 00-2011 was used in developing all water quality based limits pursuant to water quality standards (9 VAC 25-260-5 et seq) Refer to **Attachment F** for the facility wasteload allocation spreadsheet and effluent limit calculations See **Table 1** for a summary of the effluent limitations and monitoring requirements associated with the permit parameters

Reduced Monitoring All permit applications received after May 4, 1998, are to be considered for

reduction in effluent monitoring frequency GM 98-2005 states that "only facilities having exemplary operations that consistently meet permit requirements should be considered for reduced monitoring" This facility was issued Notice of Violation #W2008-11-W-1004 within the last three years and is therefore ineligible for reduced monitoring

OUTFALL 001

Flow Flow is to be estimated once per discharge month This sample type is in accordance with the VPDES Permit Manual The sample type and frequency are unchanged from the previous permit

pH pH limits of 6 0 S U minimum and 9 0 S U maximum are based on water quality standards (9 VAC 25-260-5 et seq) for the receiving stream Monitoring using grab samples is consistent with the current permit and in accordance with the sampling guidelines in the VPDES Permit Manual The limit, sample type, and monitoring frequency are unchanged from the previous permit

Total Suspended Solids A BPJ limit of 30 mg/L monthly average and 60 mg/L daily maximum is consistent with the VPDES Permit Manual The limit, sample type, and monitoring frequency are unchanged from the previous permit

Total Residual Chlorine Chlorine is used in the treatment process for disinfection purposes Based on current agency procedures contained in GM-00-2011, including the agency's WLA and STATS software, a maximum daily and monthly average limit of 11 µg/L is necessary to protect water quality The WLA and STATS printouts are included in **Attachment F** The limit, sample type, and monitoring frequency are unchanged from the previous permit

Other Water Quality Limits Water quality standards monitoring was not required to be performed The only other data associated with this discharge was included on the 2009 permit application Ammonia, cadmium, chromium, copper, lead, mercury, and zinc were all non-detect

17 **Antibacksliding Statement**

All limits in this reissuance are at least as stringent as the limits in the previous permit Therefore, this permit issuance complies with antibacksliding requirements

18 **Compliance Schedules**

There will be no compliance schedules included in the reissued permit

19 **Special Conditions**

a **Notification Levels**

Rationale Required by VPDES Permit Regulation, 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers

b **Materials Handling/Storage**

Rationale 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit Code of Virginia § 62 1-44 16 and 62 1-44 17 authorizes the

Board to regulate the discharge of industrial waste or other waste

c **Operations and Maintenance Manual**

Rationale Required by Code of Virginia § 62 1-44 16, VPDES Permit Regulation, 9 VAC 25-31-190 E, and 40 CFR 122 41(e) These require proper operation and maintenance of the permitted facility Compliance with an approved O&M manual ensures this

d **Compliance Reporting Under Part I A**

Rationale Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I This condition is necessary when toxic pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion The condition also establishes protocols for calculation of reported values

e **Total Maximum Daily Load (TMDL) Reopener**
Rationale Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit Specifically, they can be relaxed it they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act

f **Toxic Management Program**

Rationale VPDES Permit Regulation, 9VAC25-31-210 and 220 I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act See **Attachment H** for the TMP justification memo

g **Part II, Conditions Applicable to All Permits**
Rationale VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed

20 **NPDES Permit Rating Worksheet** Total Score 65
See **Attachment I** for the EPA Major-Minor Worksheet

21 **Changes to Permit**

Updated language to reflect the current VPDES permit manual

Added a TMDL reopener clause as special condition Part I B 5 The VPDES permit manual recommends adding this special condition to all permits

22 **Variances/Alternate Limits or Conditions** N/A

23 **Public Notice Information**

All pertinent information is on file and may be inspected or copied by contacting **Kevin A Harlow** at

Virginia DEQ
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, Virginia 24019
(540) 562-6700
Kevin Harlow@deq virginia gov

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments Only those comments received within this period will be considered The DEQ may decide to hold a public hearing if public response is significant Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action Following the comment period, the Board will make a determination regarding the proposed permit action This determination will become effective, unless the DEQ grants a public hearing Due notice of any public hearing will be given

24 **Additional Comments**

A **Previous Board Action** None

B **Staff Comments** The discharge is not controversial The discharge is not addressed in any planning document

C **Public Comments**

25 **303(d) Listed Segments (TMDL)**

The facility discharges to Smith Creek at river mile 3 31 Smith Creek at the discharge point is not a 303(d) listed segment However, Smith Creek from its mouth on the Jackson River upstream 1 20 miles is bacteria impaired (Cause Group Code I09R-01-BAC) Also, the Jackson River at Smith Creek is benthic impaired (Cause Group Code I09R-01-BEN) from excessive periphyton growth caused by high nutrients Although the TMDLs for each of these impaired segments have not been developed it is anticipated that the facility will not receive a wasteload allocation in either TMDL since the facility discharges neither bacteria nor nutrients that resulted in the impairments

Table 1 EFFLUENT LIMITATIONS FOR INDUSTRIAL PERMITS

( ) Interim Limitations
(X) Final Limitations

Outfall 001

Effective Dates - From Effective Date
To Expiration Date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow MGD	NA	NL	NA	NA	NL	1/D M	Est
pH standard units	3	NA	NA	6 0 s u	9 0 s u	1/D M	Grab
Total Suspended Solids mg/L	2	30 mg/L NA kg/d	NA	NA	60 mg/L NA kg/d	1/D M	5G/8HC
Total Residual Chlorine µg/L	3	11 µg/L NA kg/d	NA	NA	11 µg/L NA kg/d	1/D M	Grab

NA = Not Applicable
NL = No Limitations
1/D M = Once per month in which a discharge occurs
5G/8HC = Eight hour composite consisting of grab samples collected at hourly intervals until the discharge ceases or until a minimum of 5 grab samples have been collected

The basis for the limitations codes are

1 Federal Effluent Guidelines
2 Best Professional Judgement
3 Water Quality Standards
4 Other

Attachments

A. Site Visit Report
B. Wastewater Treatment Diagrams
C. USGS Topographic Map
D. Flow Frequency Memorandum
E. Ambient Water Quality Information
   - 2008 305b Watershed Summary Report (Excerpt)
   - STORET Data (Station 2-SMH000.08)
F. Wasteload and Limit Calculations
   - Wasteload Allocation Spreadsheet
   - STATS Program Results
G. Sludge Analysis
H. TMP Justification Memorandum
I. Industrial Permit Rating Worksheet

Attachment A

Site Visit Report

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
West Central Regional Office
3019 Peters Creek Road Roanoke Virginia 24019
(540) 562-6700 Fax (540) 562-6725
www deq virginia gov

L Preston Bryant Jr
Secretary of Natural Resources

David K Paylor
Director

Steven A Dietrich
Regional Director

SEP 12 2008

Mr Robert R Irvine
Superintendent
Clifton Forge Water Treatment Plant
P O Box 631
Covington, VA 24422

Re Unscheduled Technical Inspection Report
Clifton Forge Water Treatment Plant
VPDES Permit No VA0006076

Dear Mr Irvine

Enclosed is a copy of the Unscheduled Technical Inspection report for the above referenced facility I conducted the inspection on September 8, 2008 There are no recommendations for action related to the operation of the water treatment system at this time

If you have questions regarding the report, please contact me at the West Central Regional Office (540) 562-6829

Sincerely,

Gerald A Duff
Compliance Inspector Senior

Enclosures

Copies S C Hale file DEQ/WCRO
S G Stell DEQ/OWC

DEPA. 'MENT OF ENVIRONMENTAL ,UALITY
WEST CENTRAL REGIONAL OFFICE

UNSCHEDULED INSPECTION REPORT

FACILITY NAME	**Clifton Forge Water Treatment Plant**	FACILITY NUMBER	**VA0006076**
NOV/LON Number	**NA**	INSPECTOR	**Gerald A Duff**
INSPECTION DATE	**09/08/2008**	REPORT COMPLETED	**09/09/2008**
REPORT REVIEWED BY	**S C Hale**	SCHEDULED W/PERMITTEE	**No**
PRESENT AT INSPECTION	**Bobby Irvine**		

INSPECTION OVERVIEW

Flash Mix Basin	**No problems were noted**
Flocculation Basin	**No problems were noted**
Sedimentation	**No problems were noted**
Sand Filters	**No problems were noted**
Settling Pond	**No problems were noted**
Outfall	**No problems were noted**
Final Effluent	**The final effluent to Smith Creek was clear**

EFFLUENT FIELD TESTING

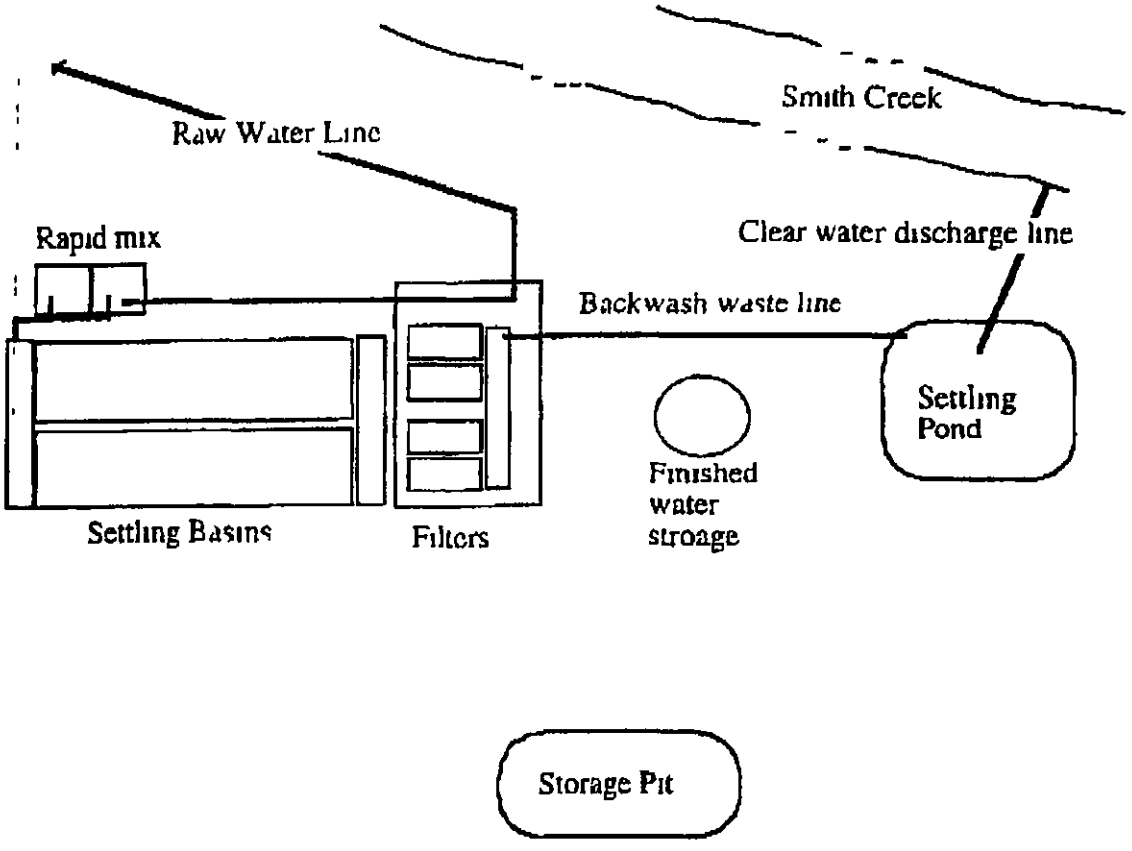
DO	**6 34 *mg/L***	**pH**	**7 59 *SU***	**TEMP**	**20 1 °C**	**Flow**	**NA**
Contact Tank Chlorine Residual			**NA**	**Effluent Chlorine Residual**			**0 0 *mg/L***
Calibration Information (See calibration log for times)		DO	**8 46 mg/L @ 21 0 °C**	pH	**7 00 @ 21 2 °C 4 01 @ 21 4 °C 10 01 @ 21 1 °C 7 00 @ 21 3 °C**	SAMPLE COLLECTION TIME/INITIAL	**09 20 a m GAD**

INSPECTION VIOLATIONS

	Illegal Discharge		Residual Chlorine Violation
	D O Violation		pH Violation
	Sludge Disposal Violation		Other (specify below)
Description of Violation(s)			

Attachment B

Wastewater Treatment Diagrams



Clifton Forge Water Treatment Plant Flow Schematic

Attachment C

USGS Topographic Map

PER FILE - ARVINE 7/21/94

NO WELLS W/I 0.25 MILES OF DISCHARGE

UNITED STATES
DEPARTMENT OF THE INTERIO
GEOLOGICAL SURVEY
PIED FOR USDA FOREST SERVICE USI

CLIFTON FORGE QUADRANGLE
VIRGINIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

GEORGE WASHIN(
JAMES RIVI

Attachment D

Flow Frequency Memorandum

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

BLUE RIDGE REGIONAL OFFICE

3019 Peters Creek Rd Roanoke, VA 24019

SUBJECT Flow Frequency Determination
Clifton Forge WTP - #VA0006076

TO Permit File

FROM Kevin Harlow

DATE September 1, 2009

The Clifton Forge WTP discharges to Smith Creek near Clifton Forge, VA Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit

The USGS operated a continuous record gage on the Smith Creek near Clifton Forge, VA (#02014500) from 1947 to 1956 The gage was located 0 5 miles upstream of the discharge point The Clifton Forge Reservoir is located on the Smith Creek between the old gage site and the discharge point The Clifton Forge WTP withdraws from the reservoir The gage was used to determine inflow to the reservoir The volume of the withdrawal was subtracted from the flow frequencies for the gage The flow frequencies for the gage are listed below

Smith Creek near Clifton Forge, VA (#02014500)

Drainage Area = 12 4 mi^2

1Q10 = 0 84 cfs	High Flow 7Q10 = 1 40 cfs
7Q10 = 0 87 cfs	HM = 4 00 cfs
30Q5 = 1 20 cfs	Annual Average = 18 6 cfs

The high flow months are December through May During the high flow period, the maximum withdrawal by the Clifton Forge WTP occurred during January 1994 and equaled 2 217 MGD (3 43 cfs) The maximum withdrawal during the low flow period occurred during July 1992 and equaled 2 050 MGD (3 17 cfs) Subtracting the volume of the withdrawal from the flow frequencies for the gage results in zero 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and 0 57 cfs for the harmonic mean, and 15 2 cfs for the annual average flow

Attachment E

Ambient Water Quality Information

- **STORET Data (Station 2-SMH000.08)**
- **2000 305b Watershed Summary Report (Excerpt)**

Clifton Forge WTP VPDES Permit VA0006076
Station ID 2 SMH000 08 Ridgeway Street in Clifton Forge

Date	Field_pH	Temp_Celsius	Hardness (mg/L CaCO3)	Wet Season
1/3/1989	7 72	5 3	38	1
4/24/1989	7 64	11 6	46	1
1/2/1990	7 59	4 5	16	1
4/2/1990	7 73	11 6	36	1
1/2/1991	8 49	6 7	20	1
2/3/1992	8 4	3 2	52	1
5/5/1992	8 6	12 6	37	1
2/9/1993	8 8	4 9	30	1
5/11/1993	7 8	16 5	32	1
2/7/1994	8 7	3 8	38	1
5/3/1994	7 8	13 6	50	1
12/11/2000	7 8	3 8	54 4	1
2/6/2001	8 3	4 3	40 3	1
4/3/2001	8 4	8 4	10 3	1
2/19/2002	7 74	2 8	13 2	1
4/17/2002	7 28	16 06	23 2	1
2/4/2003	8 18	6 3	45 4	1
3/3/2003	8 48	6 9	19 4	1
5/27/2003	7 23	13 49	22 6	1
10/5/1988	6 98	13 7	93	0
7/5/1989	8 22	19 1	50	0
7/2/1990	7 73	20 6	68	0
7/2/1991	8 5	23 9	64	0
9/5/1991	8 34	23 2	84	0
6/24/1992			41	0
8/6/1992	7 9	18 8	74	0
11/4/1992	8 1	10 7	78	0
8/10/1993			78	0
11/2/1993	7 5	6 6	86	0
8/8/2000	8	22 7	43 7	0
6/7/2001	8 3	20 7	46 2	0
7/19/2001	8 39	22 5	39 7	0
9/10/2001	8 63	22 4	58 7	0
11/28/2001	8 34	12 4	37 6	0
6/11/2002	7 74	23 29	53 5	0
8/7/2002	7 58	20 37	68 8	0
10/15/2002	8 18	12 8	64 3	0
6/25/2003	7 41	17	25 1	0
10th Percentile	7 455			
90th Percentile	8 55	22 6		
Average			46 77368421	
90th Percentile (Wet Season)		14 092		

Date	Parameter Name	Value
6/28/2001	ARSENIC AS DISS UG/L	0 43
6/28/2001	COPPER CU DISS UG/L	0 25
6/28/2001	NICKEL NI DISS UG/L	0 53

2008 Impaired Waters

Categories 4 and 5 by DCR Watershed*

James River Basin

Fact Sheet prepared for DCR Watershed I09*

Cause Group Code **I09R-01-BAC** **Smith Creek**

Location Smith Creek mainstem from its mouth on the Jackson River upstream 1 20 miles the beginning of the WQS natural trout section

City / County Alleghany Co

Use(s) Recreation

Cause(s) / VA Category Fecal Coliform/ 5A

2-SMH000 08 (Ridgeway Street - Clifton Forge) There are no additional data beyond the 2006 Integrated Report (IR) The 2004 303(d) Listed waters (1 17 miles) remain Fecal coliform bacteria (FC) exceeds the 400 cfu/100 ml instantaneous criterion in eight of 16 observations FC exceeding values range from 500 to 3500 cfu/100 ml The 2008 data window produces the same end results where FC exceeds the 400 cfu/100 ml instantaneous criterion in seven of 15 observations with the same range of exceedence Escherichia coli (E coli) will replace fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170 Bacteria other waters]

Assessment Unit / Water Name / Description	Cause Category / Name	Cycle First Listed	TMDL Schedule	Size
VAW I09R_SMH01A00 / Smith Creek Lower / Smith Creek mainstem from its mouth on the Jackson River upstream 1 20 miles the beginning of the WQS natural trout section	5A Fecal Coliform	2004	2016	1 17

Smith Creek **DCR Watershed I09***	Estuary (Sq Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type			**1 17**

Sources

- Municipal (Urbanized High Density Area)
- Sanitary Sewer Overflows (Collection System Failures)
- Unspecified Domestic Waste
- Wastes from Pets
- Wildlife Other than Waterfowl

*Header Information Location City/County Cause/VA Category and Narratives describe the entire extent of the Impairment Sizes presented are for Assessment Units (AUs) lying within the DCR Watershed boundary noted above

2008 Impaired Waters

Categories 4 and 5 by DCR Watershed*

James River Basin

Fact Sheet prepared for DCR Watershed I09*

Cause Group Code **I09R-01-BEN** **Jackson River**

Location Jackson River mainstem from the Westvaco main processing outfall downstream to the confluence of the Jackson and Cowpasture Rivers

City / County Alleghany Co Covington City

Use(s) Aquatic Life

Cause(s) / VA Category Benthic Macroinvertebrate Bioassessments/ 5A

The original 1996 VAW-I04R and VAW-I09R impairments were combined into one in 2002

2008 Assessment station locations are
2-JKS000 38 - Rt 727 Bridge - near Iron Gate (I09R)
2-JKS006 67 - Low Water Bridge - near Dabney Lancaster CC (I09R)
2-JKS013 29 - Off Rt 696 above Lowmoor (I09R)
2-JKS018 68 - Rt 18 Bridge at Covington (I09R)
2-JKS023 61 - City Park - Covington at gage (I09R)

General Standard (Benthic)
2-JKS023 61-Bio IM Seven Virginia Stream Condition Index (VSCI) surveys (2001 - 2006) lowest score spring 2001 31 03 and highest score 52 38 spring 2004 The spring 2006 score is 34 36 The invertebrate community at this site has been dominated by taxa that are tolerant of environments with low dissolved oxygen and high levels of organic pollution (i e Tubificidae Planariidae Chironomidae and Simulidae) The VSCI scores display a negative alteration in the taxonomic diversity and pollution sensitivity of the benthic community Elevated total phosphorus levels continue where 17 of 51 samples are above 0 20 mg/l - Observed Effect' The maximum value is 1 40 mg/l and the lowest 0 23 mg/l Trend analysis reveals a significant declining trend in total phosphorus

2-JKS018 68- Bio IM - Two VSCI scores from the fall of 2004 (67 3) and 2006 (51 8) The benthic community of the Jackson River shows some improvement at this station relative to the station at City Park (2-JKS023 61) However the benthic community remains dominated by pollution tolerant taxa 2008 TP results find no elevated TP levels above 0 20 mg/l from nine observations The 2006 IR reported six of 18 observations greater than 0 20 mg/l TP excursions ranged from 0 30 to 0 70 mg/l

2-JKS013 29-Bio 'IM Four VSCI survey scores result in a impaired condition with the lowest at 38 6 fall 2004 and the highest at 61 3 fall 2006 Lower VSCI scores are the result of the low taxonomic diversity and lack of pollution sensitive taxa The 2006 sample showed an increase in pollution sensitive taxa and a decrease in pollution tolerant taxa The Low Moor station has consistently had lower assessment scores and higher numbers of pollution tolerant organisms than at 2-JKS018 68 Elevated TP levels above 0 20 mg/l are found in six of 12 samples with excessive values ranging from 0 29 to 1 41 mg/l 'Observed Effect

2-JKS006 67- 2-JKS006 67- Bio IM Four VSCI surveys showing overall impairment with an average score of 52 8 There have been slight differences in scores over the six-year period Spring scores have been lower than fall scores Lower VSCI scores are the result of the decrease in pollution sensitive taxa Elevated TP concentrations greater than 0 20 mg/l are found in eight of 21 observations ranging from 0 21 to 0 50 mg/l- 'Observed Effect'

2-JKS000 38- Elevated TP observations greater than 0 20 mg/l are recorded in 15 of 50 observations- Observed Effect' Values above 0 20 mg/l range from 0 22 to 1 24 mg/l Trend analysis reveals significant declining trends in bacteria total phosphorus and nitrogen

The 1996 originally 303(d) Listed impairments to the benthic community are believed due to nutrient and organic enrichment (deposition) for 24 19 miles Based on ambient station solids data the nutrients and organics are mainly dissolved

2008 Impaired Waters

Categories 4 and 5 by DCR Watershed*

James River Basin

Fact Sheet prepared for DCR Watershed I09*

Assessment Unit / Water Name / Description	Cause Category / Name		Cycle First Listed	TMDL Schedule	Size
VAW-I09R_JKS01A00 / Jackson River Lower 1 / Jackson River mainstem from the Clifton Forge STP outfall downstream to the Jackson River confluence with the Cowpasture River	5A	Benthic Macroinvertebrate Bioassessments	1996	2010	3 48
VAW-I09R_JKS02A00 / Jackson River Lower 2 / Jackson River mainstem from the US 60 crossing downstream to the Clifton Forge STP outfall	5A	Benthic Macroinvertebrate Bioassessments	1996	2010	1 71
VAW-I09R_JKS03A00 / Jackson River Middle 1 / Jackson River mainstem from upstream of the Lowmoor community downstream to the US 60 crossing	5A	Benthic Macroinvertebrate Bioassessments	1996	2010	7 81
VAW-I09R_JKS04A00 / Jackson River Middle 2 / Jackson River mainstem from the Covington STP outfall downstream to just above the Lowmoor community	5A	Benthic Macroinvertebrate Bioassessments	1996	2010	5 81
VAW-I09R_JKS05A00 / Jackson River Upper 1 / Jackson River mainstem from downstream of the Lexington Avenue Bridge to the City of Covington STP outfall on the Jackson River	5A	Benthic Macroinvertebrate Bioassessments	1996	2010	3 26
VAW-I09R_JKS06A00 / Jackson River Upper 2 / Jackson River mainstem from the watershed boundary (I04R) at the mouth of Dunlap Creek downstream to just below the Lexington Avenue Bridge	5A	Benthic Macroinvertebrate Bioassessments	1996	2010	1 66

Jackson River **DCR Watershed I09***	Estuary (Sq Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type			**23 73**

Sources

- Industrial Point Source Discharge
- Municipal (Urbanized High Density Area)
- Municipal Point Source Discharges

*Header Information Location City/County Cause/VA Category and Narratives describe the entire extent of the Impairment Sizes presented are for Assessment Units (AUs) lying within the DCR Watershed boundary noted above

Attachment F

Wasteload and Limit Calculations

- Wasteload Allocation Spreadsheet
- STATS Program Results

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Clifton Forge WTP Permit No: VA0006076

Receiving Stream: Smith Creek Version: OWP Guidance Memo 00 2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	46 8 mg/L
90 % Temperature (Annual) =	22 6 deg C
90% Temperature (Wet season) =	14 1 deg C
90% Maximum pH =	8 55 SU
10% Maximum pH =	7 46 SU
Tier Designation (1 or 2) =	2
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	y
Early Life Stages Present Y/N? =	n

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season)	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 57 MGD
Annual Average =	15 2 MGD

Mixing Information

Annual	1Q10 Mix =	100 %
	7Q10 Mix =	100 %
	30Q10 Mix =	100 %
Wet Season	1Q10 Mix =	100 %
	30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	46 8 mg/L
90 % Temp (Annual) =	20 deg C
90% Temp (Wet season) =	20 deg C
90% Maximum pH =	7 7 SU
10 % Maximum pH =	6 75 SU
Discharge Flow =	0 05 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	2 7E+03			na	2 7E+03			na	2 7E+02			na	2 7E+02		--	na	**2 7E+02**
Acrolein	0			na	7 8E+02			na	7 8E+02		--	na	7 8E+01			na	7 8E+01		--	na	**7 8E+01**
Acrylonitrile [C]	0			na	6 6E+00	--	--	na	8 2E+01			na	6 6E 01		--	na	8 2E+00	--		na	**8 2E+00**
Aldrin [C]	0	3 0E+00		na	1 4E 03	3 0E+00		na	1 7E-02	7 5E 01		na	1 4E 04	7 5E 01		na	1 7E 03	**7 5E 01**		na	**1 7E-03**
Ammonia N (mg/l) (Yearly)	0	9 64E+00	2 51E+00	na	--	9 6E+00	2 5E+00	na		2 41E+00	6 28E 01	na		2 4E+00	6 3E 01	na		**2 4E+00**	**6 3E-01**	na	
Ammonia N (mg/l) (High Flow)	0	9 64E+00	2 51E+00	na		9 6E+00	2 5E+00	na		2 41E+00	6 28E 01	na		2 4E+00	6 3E 01	na		**2 4E+00**	**6 3E-01**	na	
Anthracene	0			na	1 1E+05	--	--	na	1 1E+05			na	1 1E+04			na	1 1E+04			na	**1 1E+04**
Antimony	0		--	na	4 3E+03			na	4 3E+03			na	4 3E+02			na	4 3E+02			na	**4 3E+02**
Arsenic	0 43	3 4E+02	1 5E+02	na	--	3 4E+02	1 5E+02	na		8 5E+01	3 8E+01	na		8 5E+01	3 8E+01	na	--	**8 5E+01**	**3 8E+01**	na	
Barium	0			na			--	na	--			na				na				na	
Benzene [C]	0		--	na	7 1E+02	--	--	na	8 8E+03			na	7 1E+01			na	8 8E+02	--		na	**8 8E+02**
Benzidine [C]	0		--	na	5 4E 03	--	--	na	6 7E 02		--	na	5 4E-04			na	6 7E-03			na	**6 7E-03**
Benzo (a) anthracene [C]	0	--	--	na	4 9E 01	--	--	na	6 1E+00	--	--	na	4 9E-02			na	6 1E-01	--		na	**6 1E-01**
Benzo (b) fluoranthene [C]	0	--	--	na	4 9E-01	--	--	na	6 1E+00		--	na	4 9E 02			na	6 1E-01	--		na	**6 1E-01**
Benzo (k) fluoranthene [C]	0			na	4 9E 01		--	na	6 1E+00		--	na	4 9E-02			na	6 1E-01		--	na	**6 1E-01**
Benzo (a) pyrene [C]	0			na	4 9E 01	--		na	6 1E+00		--	na	4 9E 02			na	6 1E 01		--	na	**6 1E-01**
Bis2 Chloroethyl Ether	0			na	1 4E+01			na	1 4E+01	--	--	na	1 4E+00			na	1 4E+00			na	**1 4E+00**
Bis2 Chloroisopropyl Ether	0	--		na	1 7E+05			na	1 7E+05			na	1 7E+04			na	1 7E+04	--		na	**1 7E+04**
Bromoform [C]	0			na	3 6E+03	--		na	4 5E+04			na	3 6E+02			na	4 5E+03			na	**4 5E+03**
Butylbenzylphthalate	0			na	5 2E+03			na	5 2E+03			na	5 2E+02			na	5 2E+02			na	**5 2E+02**
Cadmium	0	1 7E+00	6 2E 01	na		1 7E+00	6 2E 01	na	--	4 2E 01	1 6E 01	na		4 2E 01	1 6E 01	na		**4 2E 01**	**1 6E-01**	na	
Carbon Tetrachloride [C]	0			na	4 4E+01	--		na	5 5E+02			na	4 4E+00			na	5 5E+01			na	**5 5E+01**
Chlordane [C]	0	2 4E+00	4 3E 03	na	2 2E 02	2 4E+00	4 3E 03	na	2 7E 01	6 0E 01	1 1E 03	na	2 2E 03	6 0E 01	1 1E 03	na	2 7E 02	**6 0E-01**	**1 1E-03**	na	**2 7E 02**
Chloride	0	8 6E+05	2 3E+05	na		8 6E+05	2 3E+05	na		2 2E+05	5 8E+04	na		2 2E+05	5 8E+04	na		**2 2E+05**	**5 8E+04**	na	--
TRC	0	1 9E+01	1 1E+01	na	--	1 9E+01	1 1E+01	na	--	4 8E+00	2 8E+00	na		4 8E+00	2 8E+00	na		**4 8E+00**	**2 8E+00**	na	--
Chlorobenzene	0	--	--	na	2 1E+04	--	--	na	2 1E+04			na	2 1E+03	--		na	2 1E+03			na	**2 1E+03**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0			na	3 4E+02		--	na	4 2E+03			na	3 4E+01			na	4 2E+02		--	na	**4 2E+02**
Chloroform [C]	0		--	na	2 9E+04			na	3 6E+05			na	2 9E+03			na	3 6E+04			na	**3 6E+04**
2 Chloronaphthalene	0	--	--	na	4 3E+03			na	4 3E+03			na	4 3E+02			na	4 3E+02			na	**4 3E+02**
2 Chlorophenol	0		--	na	4 0E+02			na	4 0E+02			na	4 0E+01			na	4 0E+01			na	**4 0E+01**
Chlorpyrifos	0	8 3E 02	4 1E 02	na		8 3E 02	4 1E 02	na		2 1E 02	1 0E 02	na		2 1E 02	1 0E 02	na		**2 1E-02**	**1 0E-02**	na	
Chromium III	0	3 1E+02	4 0E+01	na		3 1E+02	4 0E+01	na		7 6E+01	9 9E+00	na		7 6E+01	9 9E+00	na		**7 6E+01**	**9 9E+00**	na	
Chromium VI	0	1 6E+01	1 1E+01	na		1 6E+01	1 1E+01	na		4 0E+00	2 8E+00	na		4 0E+00	2 8E+00	na		**4 0E+00**	**2 8E+00**	na	
Chromium Total	0			na				na	--			na				na				na	
Chrysene [C]	0			na	4 9E 01			na	6 1E+00			na	4 9E 02			na	6 1E 01			na	**6 1E 01**
Copper	0 25	6 6E+00	4 7E+00	na		6 6E+00	4 7E+00	na		1 8E+00	1 4E+00	na		1 8E+00	1 4E+00	na		**1 8E+00**	**1 4E+00**	na	
Cyanide	0	2 2E+01	5 2E+00	na	2 2E+05	2 2E+01	5 2E+00	na	2 2E+05	5 5E+00	1 3E+00	na	2 2E+04	5 5E+00	1 3E+00	na	2 2E+04	**5 5E+00**	**1 3E+00**	na	**2 2E+04**
DDD [C]	0		--	na	8 4E 03	--	--	na	1 0E-01	--	--	na	8 4E 04			na	1 0E 02			na	**1 0E-02**
DDE [C]	0			na	5 9E 03		--	na	7 3E 02	--	--	na	5 9E 04			na	7 3E 03			na	**7 3E 03**
DDT [C]	0	1 1E+00	1 0E 03	na	5 9E 03	1 1E+00	1 0E 03	na	7 3E 02	2 8E 01	2 5E 04	na	5 9E 04	2 8E 01	2 5E 04	na	7 3E 03	**2 8E-01**	**2 5E 04**	na	**7 3E-03**
Demeton	0		1 0E 01	na	--	--	1 0E 01	na		--	2 5E 02	na			2 5E 02	na			**2 5E 02**	na	
Dibenz(a h)anthracene [C]	0			na	4 9E 01			na	6 1E+00			na	4 9E 02			na	6 1E 01			na	**6 1E 01**
Dibutyl phthalate	0			na	1 2E+04			na	1 2E+04	--	--	na	1 2E+03			na	1 2E+03			na	**1 2E+03**
Dichloromethane (Methylene Chloride) [C]	0			na	1 6E+04		--	na	2 0E+05			na	1 6E+03			na	2 0E+04			na	**2 0E+04**
1 2 Dichlorobenzene	0			na	1 7E+04			na	1 7E+04		--	na	1 7E+03			na	1 7E+03			na	**1 7E+03**
1 3 Dichlorobenzene	0	--	--	na	2 6E+03	--		na	2 6E+03			na	2 6E+02			na	2 6E+02	--		na	**2 6E+02**
1 4 Dichlorobenzene	0			na	2 6E+03			na	2 6E+03			na	2 6E+02			na	2 6E+02			na	**2 6E+02**
3 3 Dichlorobenzidine[C]	0			na	7 7E-01			na	9 5E+00			na	7 7E 02			na	9 5E 01			na	**9 5E-01**
Dichlorobromomethane [C]	0			na	4 6E+02		--	na	5 7E+03			na	4 6E+01			na	5 7E+02			na	**5 7E+02**
1 2 Dichloroethane [C]	0			na	9 9E+02			na	1 2E+04			na	9 9E+01			na	1 2E+03			na	**1 2E+03**
1 1 Dichloroethylene	0			na	1 7E+04			na	1 7E+04			na	1 7E+03			na	1 7E+03			na	**1 7E+03**
1 2 trans-dichloroethylene	0			na	1 4E+05	--		na	1 4E+05			na	1 4E+04			na	1 4E+04			na	**1 4E+04**
2 4 Dichlorophenol	0			na	7 9E+02			na	7 9E+02			na	7 9E+01			na	7 9E+01			na	**7 9E+01**
2 4 Dichlorophenoxy acetic acid (2 4 D)	0			na				na				na				na				na	--
1 2 Dichloropropane[C]	0			na	3 9E+02			na	4 8E+03			na	3 9E+01			na	4 8E+02			na	**4 8E+02**
1 3 Dichloropropene	0			na	1 7E+03			na	1 7E+03			na	1 7E+02			na	1 7E+02	--		na	**1 7E+02**
Dieldrin [C]	0	2 4E 01	5 6E 02	na	1 4E 03	2 4E 01	5 6E 02	na	1 7E 02	6 0E 02	1 4E 02	na	1 4E 04	6 0E 02	1 4E 02	na	1 7E 03	**6 0E-02**	**1 4E 02**	na	**1 7E-03**
Diethyl Phthalate	0		--	na	1 2E+05			na	1 2E+05	--		na	1 2E+04			na	1 2E+04	--		na	**1 2E+04**
Di 2 Ethylhexyl Phthalate [C]	0			na	5 9E+01			na	7 3E+02			na	5 9E+00			na	7 3E+01			na	**7 3E+01**
2 4 Dimethylphenol	0			na	2 3E+03		--	na	2 3E+03		--	na	2 3E+02			na	2 3E+02			na	**2 3E+02**
Dimethyl Phthalate	0			na	2 9E+06			na	2 9E+06			na	2 9E+05			na	2 9E+05			na	**2 9E+05**
Di n Butyl Phthalate	0	--		na	1 2E+04			na	1 2E+04		--	na	1 2E+03			na	1 2E+03			na	**1 2E+03**
2 4 Dinitrophenol	0			na	1 4E+04			na	1 4E+04			na	1 4E+03			na	1 4E+03			na	**1 4E+03**
2 Methyl-4 6 Dinitrophenol	0			na	7 65E+02			na	7 7E+02			na	7 7E+01			na	7 7E+01			na	**7 7E+01**
2 4 Dinitrotoluene [C]	0			na	9 1E+01			na	1 1E+03			na	9 1E+00			na	1 1E+02			na	**1 1E+02**
Dioxin (2 3 7 8 tetrachlorodibenzo p-dioxin) (ppq)	0	--		na	1 2E 06			na	na	--		na	1 2E 07			na	3 7E 05			na	**na**
1 2 Diphenylhydrazine[C]	0			na	5 4E+00			na	6 7E+01			na	5 4E 01			na	6 7E+00			na	**6 7E+00**
Alpha Endosulfan	0	2 2E 01	5 6E 02	na	2 4E+02	2 2E 01	5 6E 02	na	2 4E+02	5 5E 02	1 4E 02	na	2 4E+01	5 5E 02	1 4E 02	na	2 4E+01	**5 5E 02**	**1 4E-02**	na	**2 4E+01**
Beta Endosulfan	0	2 2E 01	5 6E 02	na	2 4E+02	2 2E 01	5 6E 02	na	2 4E+02	5 5E 02	1 4E 02	na	2 4E+01	5 5E 02	1 4E 02	na	2 4E+01	**5 5E-02**	**1 4E-02**	na	**2 4E+01**
Endosulfan Sulfate	0			na	2 4E+02	--	--	na	2 4E+02			na	2 4E+01	--		na	2 4E+01		--	na	**2 4E+01**
Endrin	0	8 6E 02	3 6E 02	na	8 1E-01	8 6E 02	3 6E 02	na	8 1E 01	2 2E 02	9 0E 03	na	8 1E 02	2 2E 02	9 0E 03	na	8 1E 02	**2 2E-02**	**9 0E 03**	na	**8 1E-02**
Endrin Aldehyde	0			na	1 8E+00			na	1 8E+00	--		na	1 8E 01			na	1 8E 01			na	**1 8E-01**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--		na	2 9E+04		--	na	2 9E+04			na	2 9E+03			na	2 9E+03			na	2 9E+03
Fluoranthene	0			na	3 7E+02		--	na	3 7E+02			na	3 7E+01			na	3 7E+01			na	3 7E+01
Fluorene	0			na	1 4E+04			na	1 4E+04			na	1 4E+03			na	1 4E+03			na	1 4E+03
Foaming Agents	0		--	na		--		na	--			na				na				na	
Guthion	0	--	1 0E 02	na	--	--	1 0E-02	na		--	2 5E-03	na	--	--	2 5E 03	na	--		2 5E-03	na	--
Heptachlor [c]	0	5 2E 01	3 8E 03	na	2 1E 03	5 2E 01	3 8E-03	na	2 6E-02	1 3E 01	9 5E-04	na	2 1E-04	1 3E 01	9 5E 04	na	2 6E 03	1 3E-01	9 5E-04	na	2 6E-03
Heptachlor Epoxide[c]	0	5 2E 01	3 8E 03	na	1 1E 03	5 2E 01	3 8E 03	na	1 4E 02	1 3E 01	9 5E 04	na	1 1E 04	1 3E 01	9 5E 04	na	1 4E 03	1 3E-01	9 5E-04	na	1 4E-03
Hexachlorobenzene[c]	0			na	7 7E 03			na	9 5E-02			na	7 7E 04			na	9 5E 03			na	9 5E-03
Hexachlorobutadiene[c]	0			na	5 0E+02			na	6 2E+03			na	5 0E+01			na	6 2E+02			na	6 2E+02
Hexachlorocyclohexane Alpha BHC[c]	0			na	1 3E 01		--	na	1 6E+00			na	1 3E 02			na	1 6E 01		--	na	1 6E-01
Hexachlorocyclohexane Beta BHC[c]	0	--		na	4 6E 01		--	na	5 7E+00			na	4 6E 02			na	5 7E 01	--		na	5 7E-01
Hexachlorocyclohexane Gamma BHC[c] (Lindane)	0	9 5E-01	na	na	6 3E 01	9 5E 01	--	na	7 8E+00	2 4E 01	--	na	6 3E 02	2 4E 01		na	7 8E 01	2 4E 01		na	7 8E-01
Hexachlorocyclopentadiene	0			na	1 7E+04			na	1 7E+04			na	1 7E+03			na	1 7E+03			na	1 7E+03
Hexachloroethane[c]	0			na	8 9E+01	--		na	1 1E+03			na	8 9E+00			na	1 1E+02			na	1 1E+02
Hydrogen Sulfide	0	--	2 0E+00	na			2 0E+00	na	--		5 0E 01	na			5 0E-01	na			5 0E-01	na	--
Indeno (1 2 3-cd) pyrene [c]	0	--	--	na	4 9E-01			na	6 1E+00	--		na	4 9E 02			na	6 1E 01			na	6 1E-01
Iron	0	--	--	na		--	--	na			--	na				na		--		na	--
Isophorone[c]	0	--	--	na	2 6E+04		--	na	3 2E+05	--		na	2 6E+03			na	3 2E+04			na	3 2E+04
Kepone	0		0 0E+00	na			0 0E+00	na			0 0E+00	na			0 0E+00	na			0 0E+00	na	
Lead	0	4 5E+01	5 1E+00	na	--	4 5E+01	5 1E+00	na		1 1E+01	1 3E+00	na		1 1E+01	1 3E+00	na		1 1E+01	1 3E+00	na	
Malathion	0		1 0E 01	na		--	1 0E-01	na	--		2 5E 02	na			2 5E-02	na			2 5E-02	na	
Manganese	0	--	--	na	--	--	--	na	--		--	na				na		--	--	na	--
Mercury	0	1 4E+00	7 7E 01	na	5 1E-02	1 4E+00	7 7E 01	na	5 1E 02	3 5E 01	1 9E 01	na	5 1E 03	3 5E 01	1 9E 01	na	5 1E 03	3 5E-01	1 9E-01	na	5 1E-03
Methyl Bromide	0			na	4 0E+03			na	4 0E+03		--	na	4 0E+02			na	4 0E+02			na	4 0E+02
Methoxychlor	0		3 0E 02	na	--		3 0E 02	na	--		7 5E 03	na			7 5E 03	na	--		7 5E-03	na	
Mirex	0	--	0 0E+00	na			0 0E+00	na			0 0E+00	na			0 0E+00	na			0 0E+00	na	
Monochlorobenzene	0			na	2 1E+04	--		na	2 1E+04			na	2 1E+03			na	2 1E+03			na	2 1E+03
Nickel	0 53	9 6E+01	1 1E+01	na	4 6E+03	9 6E+01	1 1E+01	na	4 6E+03	2 4E+01	3 1E+00	na	4 6E+02	2 4E+01	3 1E+00	na	4 6E+02	2 4E+01	3 1E+00	na	4 6E+02
Nitrate (as N)	0	--		na	--	--		na				na	--	--		na	--	--		na	--
Nitrobenzene	0	--	--	na	1 9E+03			na	1 9E+03		--	na	1 9E+02		--	na	1 9E+02		--	na	1 9E+02
N Nitrosodimethylamine[c]	0			na	8 1E+01			na	1 0E+03			na	8 1E+00			na	1 0E+02			na	1 0E+02
N Nitrosodiphenylamine[c]	0			na	1 6E+02		--	na	2 0E+03			na	1 6E+01			na	2 0E+02			na	2 0E+02
N Nitrosodi n propylamine[c]	0			na	1 4E+01	--		na	1 7E+02			na	1 4E+00			na	1 7E+01			na	1 7E+01
Parathion	0	6 5E 02	1 3E-02	na	--	6 5E-02	1 3E 02	na	--	1 6E 02	3 3E 03	na		1 6E-02	3 3E-03	na		1 6E-02	3 3E-03	na	--
PCB 1016	0	--	1 4E 02	na	--	--	1 4E-02	na		--	3 5E-03	na		--	3 5E-03	na			3 5E-03	na	--
PCB 1221	0	--	1 4E 02	na		--	1 4E-02	na		--	3 5E-03	na			3 5E-03	na			3 5E-03	na	--
PCB 1232	0	--	1 4E 02	na	--		1 4E 02	na	--	--	3 5E 03	na		--	3 5E-03	na	--		3 5E 03	na	--
PCB 1242	0		1 4E 02	na	--		1 4E 02	na			3 5E 03	na			3 5E 03	na		--	3 5E-03	na	
PCB 1248	0	--	1 4E 02	na		--	1 4E 02	na	--		3 5E 03	na			3 5E 03	na			3 5E-03	na	
PCB 1254	0		1 4E 02	na	--		1 4E-02	na		--	3 5E-03	na		--	3 5E 03	na		--	3 5E-03	na	--
PCB-1260	0	--	1 4E-02	na	--	--	1 4E 02	na	--		3 5E 03	na	--		3 5E-03	na	--	--	3 5E-03	na	--
PCB Total[c]	0	--		na	1 7E-03	--	--	na	2 1E 02		--	na	1 7E 04	--		na	2 1E-03	--	--	na	2 1E-03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol [C]	0	6 8E+00	5 2E+00	na	8 2E+01	6 8E+00	5 2E+00	na	1 0E+03	1 7E+00	1 3E+00	na	8 2E+00	1 7E+00	1 3E+00	na	1 0E+02	1 7E+00	1 3E+00	na	1 0E+02
Phenol	0			na	4 6E+06		--	na	4 6E+06			na	4 6E+05			na	4 6E+05			na	4 6E+05
Pyrene	0			na	1 1E+04			na	1 1E+04			na	1 1E+03			na	1 1E+03			na	1 1E+03
Radionuclides (pCi/l except Beta/Photon)	0			na	--			na				na				na				na	
Gross Alpha Activity	0			na	1 5E+01		--	na	1 5E+01			na	1 5E+00			na	1 5E+00		--	na	1 5E+00
Beta and Photon Activity (mrem/yr)	0		--	na	4 0E+00			na	4 0E+00			na	4 0E 01			na	4 0E 01			na	4 0E-01
Strontium 90	0		--	na	8 0E+00			na	8 0E+00			na	8 0E 01			na	8 0E 01			na	8 0E-01
Tritium	0	--		na	2 0E+04		--	na	2 0E+04			na	2 0E+03			na	2 0E+03			na	2 0E+03
Selenium	0	2 0E+01	5 0E+00	na	1 1E+04	2 0E+01	5 0E+00	na	1 1E+04	5 0E+00	1 3E+00	na	1 1E+03	5 0E+00	1 3E+00	na	1 1E+03	5 0E+00	1 3E+00	na	1 1E+03
Silver	0	9 3E 01		na		9 3E 01		na	--	2 3E 01		na		2 3E 01		na		2 3E-01		na	
Sulfate	0			na				na				na				na				na	
1 1 2 2 Tetrachloroethane [C]	0			na	1 1E+02			na	1 4E+03			na	1 1E+01			na	1 4E+02			na	1 4E+02
Tetrachloroethylene [C]	0			na	8 9E+01	--		na	1 1E+03			na	8 9E+00			na	1 1E+02		--	na	1 1E+02
Thallium	0			na	6 3E+00			na	6 3E+00			na	6 3E 01			na	6 3E 01		--	na	6 3E-01
Toluene	0			na	2 0E+05			na	2 0E+05			na	2 0E+04		--	na	2 0E+04		--	na	2 0E+04
Total dissolved solids	0			na				na				na				na				na	
Toxaphene [C]	0	7 3E 01	2 0E 04	na	7 5E-03	7 3E 01	2 0E-04	na	9 3E 02	1 8E 01	5 0E-05	na	7 5E 04	1 8E 01	5 0E 05	na	9 3E 03	1 8E 01	5 0E-05	na	9 3E-03
Tributyltin	0	4 6E 01	6 3E 02	na		4 6E 01	6 3E 02	na		1 2E 01	1 6E 02	na		1 2E 01	1 6E 02	na		1 2E-01	1 6E-02	na	--
1 2 4 Trichlorobenzene	0	--		na	9 4E+02			na	9 4E+02			na	9 4E+01			na	9 4E+01	--		na	9 4E+01
1 1 2 Trichloroethane [C]	0		--	na	4 2E+02			na	5 2E+03	--		na	4 2E+01			na	5 2E+02			na	5 2E+02
Trichloroethylene [C]	0			na	8 1E+02			na	1 0E+04			na	8 1E+01			na	1 0E+03			na	1 0E+03
2 4 6-Trichlorophenol [C]	0			na	6 5E+01		--	na	8 1E+02		--	na	6 5E+00			na	8 1E+01			na	8 1E+01
2 (2 4 5 Trichlorophenoxy) propionic acid (Silvex)	0	--		na				na			--	na				na			--	na	
Vinyl Chloride [C]	0			na	6 1E+01			na	7 6E+02	--		na	6 1E+00			na	7 6E+01			na	7 6E+01
Zinc	0	6 2E+01	6 2E+01	na	6 9E+04	6 2E+01	6 2E+01	na	6 9E+04	1 5E+01	1 6E+01	na	6 9E+03	1 5E+01	1 6E+01	na	6 9E+03	1 5E+01	1 6E+01	na	6 9E+03

Notes

1 All concentrations expressed as micrograms/liter (ug/l) unless noted otherwise

2 Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals

3 Metals measured as Dissolved unless specified otherwise

4 C indicates a carcinogenic parameter

5 Regular WLAs are mass balances (minus background concentration) using the / of stream flow entered above under Mixing Information
Antidegradation WLAs are based upon a complete mix

6 Antideg Baseline = (0 25(WQC background conc) + background conc) for acute and chronic
= (0 1(WQC background conc) + background conc) for human health

7 WLAs established at the following stream flows 1Q10 for Acute 30Q10 for Chronic Ammonia 7Q10 for Other Chronic 30Q5 for Non carcinogens
Harmonic Mean for Carcinogens and Annual Average for Dioxin Mixing ratios may be substituted for stream flows where appropriate

Metal	Target Value (SSTV)
Antimony	4 3E+02
Arsenic	2 3E+01
Barium	na
Cadmium	9 4E 02
Chromium III	6 0E+00
Chromium VI	1 6E+00
Copper	7 3E 01
Iron	na
Lead	7 7E 01
Manganese	na
Mercury	5 1E 03
Nickel	1 8E+00
Selenium	7 5E 01
Silver	9 3E 02
Zinc	6 2E+00

Note do not use QL s lower than the minimum QL s provided in agency guidance

9/8/2009 4 39 00 PM

Facility = Clifton Forge WTP
Chemical = TRC
Chronic averaging period = 4
WLAa = 11
WLAc = 19
Q L = 100
samples/mo = 1
samples/wk = 1

Summary of Statistics

observations = 1
Expected Value = 4000
Variance = 5760000
C V = 0 6
97th percentile daily values = 9733 67
97th percentile 4 day average = 6655 16
97th percentile 30 day average= 4824 21
< Q L = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 11
Average Weekly limit = 11
Average Monthly LImit = 11

The data are

4000

Attachment G

Sludge Analysis

JTH

1115 5th Street SW Charlottesville Virginia 22902 6465

RECEIVED

MAR 22 1996

DEQ - WATER DIVISION
ROANOKE VA

March 20, 1996

Mr Jeffrey T Hancock, Environmental Engineer
Virginia DEQ, WCRO
P O Box 7017
Roanoke, Virginia 24019

Subject Sludge Analyses, Clifton Forge's Water Treatment Plant

Dear Mr Hancock

During our meeting in your office in November, it was proposed that Clifton Forge test the backwash water to determine if there are any constituents in the backwash which could cause groundwater contamination Groundwater standards were to be used for comparison This letter/report summarizes the results of sludge sampling at the City's water plant

Telephone
804 977 1498
Facsimile
804 977 6778

On February 22, 1996, EARTH TECH personnel collected a grab sample of sludge from the pipe that discharges fresh sludge to the lagoon The sample was submitted for analyses on the same date The sample was analyzed for total metals, surfactants-as methylene blue active substances (MBAS), total petroleum hydrocarbons (TPH), cyanide, phenols, total organic halogens (TOX [surrogate analysis for chlorinated compounds]), nitrogen, alkalinity, total dissolved solids (TDS), fluoride, color, total organic carbon (TOC), sulfates, chlorides, and pH Results of the analyses are summarized in the following table The laboratory certificate of analysis is also attached

Table 1 Comparison of Sludge Sampling Results and Groundwater Standards

Analysis	QL	Sludge Sample Result	Groundwater Standard/ (Criteria)
Alkalinity (mg/L)	1 0	30	(30 500)
Ammonia (mg/L)	1 0	**BQL**	0 025 -
Chloride (mg/L)	1 0	3 4	(25)
Color (color units)	5 0	BQL	(15)
Cyanide (mg/L)	0 02	**BQL**	0 005 -
Fluoride (mg/L)	0 1	BQL	(1 4)
MBAS (mg/L)	0 10	**BQL**	0 05 -
Nitrate (mg/L)	0 1	BQL	5
Nitrite (mg/L)	0 01	0 01	0 025
*pH (pH units)	0 10	6 83	6-9
Phenols (mg/L)	0 005	**BQL**	0 001 -
Sulfate (mg/L)	3 0	24	(100)
TOC (mg/L)	0 9	8 2	(10)
TOX† (µg/L)	1 0	11	NS
TDS (mg/L)	10	36	(500)
TPH-IR (mg/L)	20	5 1	1

Mr Hancock
March 20, 2996
page 2

Table 1 cont

Analysis	QL	Sludge Sample Result	Groundwater Standard/ (Criteria)
Total Metals (mg/L)			
Arsenic (As)	0 020	0 050	0 05
Barium (Ba)	0 01	0 04	1 0
Cadmium (Cd)	0 005	**0 005**	0 0004
Chromium	0 01	BQL	0 05
Copper (Cu)	0 01	0 02	1 0
Lead (Pb)	0 001	0 009	0 05
Mercury (Hg)	0 0001	**0 0004**	0 00005
Selenium (Se)	0 005	BQL	0 01
Silver (Ag)	0 01	**0 02**	None
Sodium (Na)	1 0	BQL	25
Zinc (Zn)	0 01	**0 13**	0 05

* - pH analysis exceeded holding time
mg/L - milligrams per liter, µg/L - micrograms per liter
QL - Quantitation Limit
BQL - Below Quantitation Limit
Bold Indicates sample exceeds or possibly exceeds groundwater standards/(criteria)
NS - No Standard
† - TOX was used as a surrogate analysis for several chlorinated compounds

Thank you for your assistance in this matter If you have questions, please call

Sincerely

EARTH TECH

John W Greene

John W Greene, P E

Copy Mr Dick Magnifico, City Manager
Mr Brandon Nicely, Director of Public Works
Mr Bobby Irvine, Water Treatment Plant Superintendent

File C100/23 3/2 Project Number 7441 801

Attachment H

TMP Justification Memorandum

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
BLUE RIDGE REGIONAL OFFICE

3019 Peters Creek Road Roanoke, VA 24019

SUBJECT TMP for Permit Reissuance for Clifton Forge WTP - VA0006076

TO Permit File

FROM Kevin Harlow, BRRO - Roanoke

DATE September 1, 2009

General Information

The Town of Clifton Forge Water Treatment Plant discharges a maximum daily flow of 0 1 MGD and an average flow of 0 05 MGD Wastewater is generated from the backwashing of the two filters (0 024 MGD each), from the two mixing basins (0 025 MGD, twice per year), and from the sedimentation basin (0 15 mgd, four days per year)

Based on the previous agency TMP guidance, the permittee maintained an average effluent flow of 0 05 mgd or less in order to not have TMP permit requirements The permittee has operated and maintained a magnetic flow meter on the discharge to demonstrate that the facility meets the discharge flow TMP criteria However, current agency TMP guidance (GM00-2012) suggests that all water treatment plants test for toxicity unless there is enough data to demonstrate a lack of toxicity

Recommendations - Biological Testing

Outfall 001
It is recommended that annual acute toxicity testing begin for evaluation of the toxicity of the discharge associated with the sedimentation basin clean-out using Ceriodaphnia dubia and Pimephales promelas for multi-dilutional, NOAEC=100% acute testing

1 Guidance Memo 00-2012 recognizes water treatment plant discharges as discharges with the potential to be toxic There is no toxicity data on file to determine that additional monitoring is not required

Attachment I

Industrial Permit Rating Worksheet

NPDES Permit Rating Work Sheet

___ Regular Addition
___ Discretionary Addition
___ Score change, but no status change
___ Deletion

NPDES NO |_V__|_A__|_0__|_0__|_0__|_6__|_0__|_7__|_6__|

Facility Name

|_C_|_|_|_i_|_f_|_t_|_o_|_n_|__|_F_|_o_|_r_|_g_|_e_|__|_W_|_T_|_P_|_|_|__|_|_|_|_|_|_|_|_|__|_|_|_|_|_|_|

City |_C_|_|_|_i_|_f_|_t_|_o_|_n_|__|_F_|_o_|_r_|_g_|_e_|__|__|__|__|__|__|__|__|__|__|__|__|__|

Receiving Water |_S_|_m_|_i_|_t_|_h_|__|_C_|_r_|_e_|_e_|_k_|_|_|__|__|_|_|_|_|__|__|__|__|__|__|__|__|__|

Reach Number |_V__|_A__|_W__|_ __|_|__|_0__|_9__|_R__|__|__|__|

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?

1 Power output 500 MW or greater (not using a cooling pond/lake)
2 A nuclear power plant
3 Cooling water discharge greater than 25% of the receiving stream s 7Q10 flow rate

___ YES score is 600 (stop here) _x_ NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100 000?

___ YES score is 700 (stop here)
_x_ NO (continue)

FACTOR 1 Toxic Pollutant Potential

PCS SIC Code |__|__|__|__| Primary SIC Code |_4_|_9_|_4_|_1_|

Other SIC Codes |__|__|__|__| |__|__|__|__| |__|__|__|__| |__|__|__|__|

Industrial Subcategory Code |_0_|_0_|_0_| (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A Be sure to use the TOTAL toxicity potential column and check one

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
__ No process waste streams	0	0	___ 3	3	15	_X__ 7	7	35
___ 1	1	5	___ 4	4	20	__ 8	8	40
___ 2	2	10	___ 5	5	25	___ 9	9	45
			___ 6	6	30	___ 10	10	50

Code Number Checked |_0_|_7_|

Total Points Factor 1 |_3_|_5_|

FACTOR 2 Flow/Stream Flow Volume *(Complete Either Section A or Section B, check only one)*

Section A Wastewater Flow Only Considered

Wastewater Type (See Instructions)			Code	Points
Type I	Flow < 5 MGD	___	11	0
	Flow 5 to 10 MGD	___	12	10
	Flow > 10 to 50 MGD	___	13	20
	Flow > 50 MGD	___	14	30
Type II	Flow < 1 MGD	__	21	10
	Flow 1 to 5 MGD	___	22	20
	Flow > 5 to 10 MGD	___	23	30
	Flow > 10 MGD	___	24	50
Type III	Flow < 1 MGD	___	31	0
	Flow 1 to 5 MGD	___	32	10
	Flow > 5 to 10 MGD	___	33	20
	Flow > 10 MGD	___	34	30

Section B--Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III	< 10%	___	41	0
	≥ 10% to < 50%	___	42	10
	≥ 50%	_X__	43	20
Type II	<10%	___	51	0
	≥ 10% to < 50%	___	52	20
	≥ 50%	___	53	30

Code Checked from Section A or B |_4_|_3_|

Total Points Factor 2 |_2_|_0_|

NPDES Permit Rating Work Sheet

FACTOR 3 Conventional Pollutants

(only when limited by the permit)

A Oxygen Demanding Pollutant (check one) ___ BOD ___ COD ___ Other

			Code	Points
Permit Limits (check one)	_X_	< 100 lbs/day	1	0
	___	100 to 1000 lbs/day	2	5
	___	>1000 to 3000 lbs/day	3	15
	___	>3000 lbs/day	4	20

Code Checked |_1_|

Points Scored |_0_|_0_|

B Total Suspended Solids (TSS)

			Code	Points
Permit Limits (check one)	_X_	< 100 lbs/day	1	0
	___	100 to 1000 lbs/day	2	5
	___	>1000 to 5000 lbs/day	3	15
	___	>5000 lbs/day	4	20

Code Checked |_1_|

Points Scored |_0_|_0_|

C Nitrogen Pollutant (check one) ___ Ammonia ___ Other _____

			Code	Points
Permit Limits (check one)	_X_	< 300 lbs/day	1	0
	___	300 to 1000 lbs/day	2	5
	___	>1000 to 3000 lbs/day	3	15
	___	>3000 lbs/day	4	20

Code Checked |_1_|

Points Scored |_0_|_0_|

Total Points Factor 3 |_0_|_0_|

FACTOR 4 Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries or other methods of conveyance that ultimately get water from the above referenced supply

___ YES (if yes check toxicity potential number below)
_X_ NO (if no go to Factor 5)

Determine the human health toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1 (Be sure to use the human health toxicity group column – check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
__X_ No process waste streams	0	0	___ 3	3	0	___ 7	7	15
___ 1	1	0	___ 4	4	0	___ 8	8	20
___ 2	2	0	___ 5	5	5	___ 9	9	25
			___ 6	6	10	___ 10	10	30

Code Number Checked |_0_|_0_|

Total Points Factor 4 |_0_|_0_|

NPDES Permit Rating Work Sheet

NPDES No |_V_|_A_|_0_|_0_|_0_|_6_|_0_|_7_|_6_|

FACTOR 5 Water Quality Factors

A Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines or technology based state effluent guidelines) or has a wasteload allocation been assigned to the discharge?

		Code	Points
_X__	Yes	1	10
___	No	2	0

B Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

		Code	Points
_x_	Yes	1	0
___	No	2	5

C Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

		Code	Points
___	Yes	1	10
_x_	No	2	0

Code Number Checked A |_1_| B |_1_| C |_2_|

Points Factor 5 A |_1_|_0_| + B |_0_| + C |_0_| = |_1_|_0_| TOTAL

FACTOR 6 Proximity to Near Coastal Waters N/A

A Base Score Enter flow code here (from Factor 2) |_4__|_3__|

Enter the multiplication factor that corresponds to the flow code |__0_|__1_|

Check appropriate facility HPRI Code (from PCS)

	HPRI #	*Code*	*HPRI Score*
___	1	1	20
___	2	2	0
___	3	3	30
_X__	4	4	0
___	5	5	20

Flow Code	Multiplication Factor
11 31 or 41	0 00
12 32 or 42	0 05
13 33 or 43	0 10
14 or 34	0 15
21 or 51	0 10
22 or 52	0 30
23 or 53	0 60
24	1 00

HPRI code checked |_4__|

Base Score (HPRI Score) _____0_____ x (Multiplication Factor) ___0 1_____ = _____0____ (TOTAL POINTS)

B Additional Points NEP Program
For a facility that has an HPRI code of 3 does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?
N/A

		Code	Points
___	Yes	1	10
___	No	2	0

C Additional Points–Great Lakes Area of Concern
For a facility that has an HPRI code of 5 does the facility discharge any of the pollutants of concern into one of the Great Lakes 31 areas of concern (see instructions)

N/A

		Code	Points
___	Yes	1	10
___	No	2	0

Code Number Checked A |_N/A_| B |_N/A_| C |_N/A_|

Points Factor 5 A |___|___| + B |___|___| + C |___|___| = |_____0_____| TOTAL

NPDES Permit Rating Work Sheet

NPDES NO |_V_|_A_|_0_|_0_|_0_|_6_|_0_|_7_|_6_|

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	____35_____
2	Flow/Stream Flow Volume	____20_____
3	Conventional Pollutants	____00_____
4	Public Health Impacts	____00_____
5	Water Quality Factors	____10_____
6	Proximity to Near Coastal Waters	____00_____
	TOTAL (Factors 1-6)	____65_____

S1 Is the total score equal to or greater than 80? ___ Yes (Facility is a major) _x_ No

S2 If the answer to the above question is no would you like this facility to be discretionary major?

_x_ No

___ Yes (add 500 points to the above score and provide reason below

Reason _____

_____

_____

_____

_____

NEW SCORE ____65_____

OLD SCORE ____65_____ **(Total Points were previously added incorrectly)**

_____**Kevin Harlow**_____

Permit Reviewer's Name

(__540_____)___562____ ___6788_____

Phone Number

____**July 28, 2009**_____

Date

npdesrs dak (2/21/95)